

I CLAIM:

1. A fluid dispenser device adapted for mounting at a top open end of a container containing fluid therein, said fluid dispenser device comprising:

5 a tubular mount having a surrounding wall which surrounds an axis, which defines an accommodation chamber therein, and which has an upper surrounding portion that is adapted to be fitted in the top open end of the container, and a lower surrounding portion that is opposite to said 10 upper surrounding portion and that has an intake port adapted for suction of the fluid in the container therethrough;

15 a volume variable member received in said accommodation chamber, and defining a passage therein which extends along the axis, said passage including an inlet end which is fluid-tightly secured to said lower surrounding portion and which is disposed in fluid communication with and downstream of said intake port, an outlet end which is disposed downstream of said inlet 20 end and which is opposite to said inlet end along the axis, and an intermediate portion which is interposed between said inlet and outlet ends and which is configured such that said outlet end is movable between an expanding position, where said outlet end is away from said intake port so that said passage has a larger volume, and a collapsed position, where said outlet end is close to said 25 intake port so that said passage has a smaller volume;

5 a tubular plunger having a surrounding plunger wall which defines a conduit, said plunger wall including a surrounding depressing portion which is fluid-tightly secured to said outlet end of said passage such that said conduit is fluidly communicated with said passage, and which is movable relative to said surrounding wall of said tubular mount along the axis so as to bring said outlet end to move between the expanding and collapsed positions, and a surrounding actuated portion which extends from 10 said surrounding depressing portion outwardly of said upper surrounding portion so as to be actuated to move said outlet end toward the collapsed position, thereby squeezing the fluid out of said passage and creating a reduced pressure in said passage once said outlet end is 15 returned to the expanding position;

20 a biasing member disposed to bias said outlet end towards the expanding position, thereby suctioning the fluid in the container through said intake port to replenish said passage by virtue of the reduced pressure created in said passage;

25 an inlet valve member disposed upstream of said intake port, said inlet valve member permitting the fluid in the container to flow into said passage of said volume variable member only, and preventing the fluid from flowing back into the container when the fluid in said passage is squeezed; and

 an outlet valve member disposed downstream of said

surrounding depressing portion of said tubular plunger,
said outlet valve member permitting the fluid in said
passage and said conduit to flow out through said conduit
only when the fluid in said passage is squeezed, and
5 helping create the reduced pressure in said passage by
virtue of closure of said outlet valve member when said
outlet end is returned to the expanding position.

2. The fluid dispenser device of Claim 1, wherein said
intermediate portion of said passage of said volume
10 variable member is made from a flexible material, and
is configured to have a bellows shape.

3. The fluid dispenser device of Claim 1, further
comprising a dipping tube which is connected to and which
is fluidly communicated with said lower surrounding
15 portion, and which is adapted to dip into the fluid in
the container, said inlet valve member including a valve
seat which is formed integrally with said dipping tube
and which extends towards the axis in radial directions,
and a ball which is detachably engaged with said valve
20 seat so as to open and close said valve seat by virtue
of a pressure difference between said passage and the
fluid.

4. The fluid dispenser device of Claim 3, further
comprising a porous member which is disposed on said lower
25 surrounding portion so as to deny entry of said ball into
said passage while permitting flow of the fluid in the
container into said passage.

5. The fluid dispenser device of Claim 4, further comprising a tubular stem which extends from said porous member along the axis, said biasing member being a coil spring which is received in said passage, and which is sleeved on said tubular stem such that the biasing movement of said coil spring is stabilized.
10. The fluid dispenser device of Claim 1, wherein said outlet valve member includes a valve seat which is formed integrally with said surrounding plunger wall at a position between said surrounding depressing portion and said surrounding actuated portion and which extends towards the axis in radial directions, and a ball which is detachably engaged with said valve seat so as to open and close said valve seat by virtue of squeezing of the fluid.
15. The fluid dispenser device of Claim 1, wherein said tubular plunger further has a surrounding flange portion which extends outwardly and radially from said surrounding depressing portion such that said surrounding flange portion is in slidable contact with said surrounding wall of said tubular mount, thereby stabilizing movement of said outlet end along the axis between the expanding and collapsed positions.
20. The fluid dispenser device of Claim 1, wherein said tubular mount further includes a radially extending flange which extends from said surrounding wall radially and outwardly and which is adapted to be mounted on the
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top open end of the container,
said fluid dispenser device further comprising
a surrounding retaining cap which has a surrounding top
wall that has a periphery and that is disposed on said
5 radially extending flange, and a surrounding threaded
wall that extends downwardly from said periphery of said
surrounding top wall and that is adapted to engage
threadedly the top open end of the container, and
a surrounding retaining collar which is engaged with
10 said upper surrounding portion so as to force said
radially extending flange to abut against said
surrounding top wall of said surrounding retaining cap,
thereby securing said tubular mount onto the container.

9. The fluid dispenser device of Claim 8, further
15 comprising a spout which is connected to said surrounding
actuated portion and which is fluidly communicated with
said conduit for discharging the fluid squeezed up said
conduit.